

REMARKS

The enclosed is responsive to the Examiner's Office Action mailed on April 11, 2011. At the time the Examiner mailed the Office Action, claims 1-53 were pending. By way of the present response applicants have: 1) amended claims 1-3, 6-8, 14, 28, 30-38, 41, 43, and 44; and 2) added claim 58; and 3) canceled claims 4 and 5. Support for the amendment is found in the specification as originally filed – e.g., at least in page 6, lines 14-17, page 9, line 10 – page 11, line 7, and page 17, lines 16-22. No new matter has been added. Reconsideration of this application as amended is respectfully requested.

Priority

Applicants shall submit a certified copy of the priority application in due course.

35 U.S.C. §112 Rejections

Claims 1-3, 6-8, 14-28, 30-38, 41, 43, and 44 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. In particular, the Examiner rejected the claims for the use of the term "substantially" in claim 1. Applicants respectfully submit that, in light of the specification, a person having ordinary skill in the art would know what was meant by "substantially single-phase." For example, the specification describes a "multi-phase fluid" as including a mixture of gas, fluid, and froth, and a "single-phase fluid" as a fluid being separated from undissolved gasses or froth. "The fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite under 35 U.S.C. 112,

second paragraph.” (MPEP §2173.05(b)). The term “substantially” is often used in conjunction with another term to describe a particular characteristic of a claims using the term substantially has been held to be definite. (MPEP §2173.05(b)).

Accordingly, applicants respectfully submit that the rejection of claims 1-3, 6-8, 14-28, 30-38, 41, 43, and 44 under 35 U.S.C. §112 has been overcome.

Claims 34-37 stand rejected under 35 U.S.C. §112, fourth paragraph, for failing to further limit the parent claim.

In particular, the Examiner rejected claims 34 and 35 as allegedly being directed to “a method step.” Applicants respectfully disagree. “There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper.” (MPEP §2173.05(g)). In the interest of furthering prosecution, however, applicants have amended claim 34 to recite that the claimed sampler further comprises a storage vessel.

Additionally, the Examiner rejected claim 37 as lacking antecedent basis for “said additional fluid sensor” and “said storage vessel.” Applicants have amended claim 37 to depend upon claim 36 to correct this informality.

Accordingly, applicants respectfully submit that the rejection of claims 34-37 under 35 U.S.C. §112 has been overcome.

Claim Rejections – 35 U.S.C. §102

Claims 1-3, 6-8, 14, 31, 34, 35, and 41 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S Patent No. 5,052,341 by Woolford (“Woolford).

Applicants respectfully submit that Woolford fails to disclose

wherein said fluid sensor system is positioned to **detect the presence of single-phase fluid or gas at a position** in the collection recess **indicative of sufficient single-phase fluid volume to extract a defined volume sample**, and wherein, **said defined sample volume** of said single-phase fluid or gas is obtainable by operating the fluid controller to allow the sample volume to flow through the extraction outlet after said fluid sensor has detected the presence of said minimum volume of single-phase fluid or gas in the fluid collection recess

(Amended claim 1) (emphasis added).

Woolford describes a sensing means to detect the presence of a volume of milk greater than or equal to a predetermined volume and a control means to close a valve each time the sensing means senses a reduction to said predetermined volume. (Woolford, col. 3, lines 1-18). For example, the milk is kept above the top of the upper spreader by closing the valve in less than 0.1 second whenever the sensor detects that it is no longer covered in liquid. (Woolford, col. 4, lines 52-62). In other words, Woolford describes a sensor to detect a minimum volume of milk at which the controller shuts off the valve without regard for the volume of milk that is drawn into the intake pipe. In contrast, amended claim 1 includes a sensor system to detect a **defined** sample volume that is indicated to be available for extraction and the defined sample volume is extracted after said fluid sensor has detected the presence of a minimum volume.

Accordingly, applicants respectfully submit that the rejection of claim 1 has been overcome.

Given that claims 2, 3, 6-8, 14, 31, 34, 35, and 41 are dependent upon claim 1, and include additional features, applicants respectfully submit that the rejection of

claims 2, 3, 6-8, 14, 31, 34, 35, and 41 has been overcome for at least the reasons set forth above.

Claims 1-3, 6-8, 14, 28, 30, 34-37, 43, and 44 stand rejected under 35 U.S.C. §102(a) and (e) as being anticipated by U.S Patent Publication No. 2004/0194712 by Johannesson et al. ("Johannesson"). Applicants do not admit that Johannesson is prior art and reserve the right to swear behind Johannesson at a later date.

Applicants respectfully submit that Johannesson also fails to disclose

wherein said fluid sensor system is positioned to
detect the presence of single-phase fluid or gas at a position in the collection recess ***indicative of sufficient single-phase fluid volume to extract a defined volume sample***, and wherein, ***said defined sample volume*** of said single-phase fluid or gas is obtainable by operating the fluid controller to allow the sample volume to flow through the extraction outlet after said fluid sensor has detected the presence of said minimum volume of single-phase fluid or gas in the fluid collection recess

(Amended claim 1) (emphasis added).

Johannesson describes a quantity sensor to detect a quantity of milk in a sample reservoir. A control mechanism opens and closes valves in response to the output of this detector. "Specifically, during the emptying of the sample reservoir the quantity detector may detect that the remaining milk analysis quantity falls beneath a given threshold, and one or both valves may be closed." (Johannesson, paragraph [0116]). Similar to Woolford, Johannesson describes using a sensor to determine when to close a valve. In contrast, amended claim 1 includes a sensor system to detect a ***defined*** sample volume that is indicated to be available for extraction and the defined sample volume is extracted after said fluid sensor has detected the presence of a minimum volume.

Accordingly, applicants respectfully submit that the rejection of claim 1 has been overcome.

Given that claims 2, 3, 6-8, 14, 28, 30, 34-37, 43, and 44 are dependent upon claim 1, and include additional features, applicants respectfully submit that the rejection of claims 2, 3, 6-8, 14, 28, 30, 34-37, 43, and 44 has been overcome for at least the reasons set forth above.

Claim Rejections – 35 U.S.C. § 103

Claims 32 and 33 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Woolford.

Given that claims 32 and 33 are dependent upon claim 1, and include additional features, applicants respectfully submit that the rejection of claims 32 and 33 has been overcome for at least the reasons set forth above.

Claim 38 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Johannesson in view of U.S. Patent No. 4,659,656 by Sandholm (“Sandholm”).

Sandholm describes a method of detecting mastitis in cows. Sandholm, however, does not teach or suggest

wherein said fluid sensor system is positioned to ***detect the presence of single-phase fluid or gas at a position*** in the collection recess ***indicative of sufficient single-phase fluid volume to extract a defined volume sample***, and wherein, ***said defined sample volume*** of said single-phase fluid or gas is obtainable by operating the fluid controller to allow the sample volume to flow through the extraction outlet after said fluid sensor has detected the presence of said minimum volume of single-phase fluid or gas in the fluid collection recess.

(Amended claim 1) (emphasis added).

Given that Sandholm fails to remedy the shortcomings of Johannesson and that claim 38 is dependent upon claim 1, applicants respectfully submit that the rejection of claim 38 has been overcome.

New Claim

Applicants submit that new claim 58 is dependent upon claim 1 and patentable over Woolford, Johannesson, and Sandholm for at least the reasons set forth above.

Additionally, applicants submit that Woolford, Johannesson, and Sandholm fail to disclose, teach, or suggest

a total internal reflection sensor including an emitter and a detector, and
a transmission sensor including an emitter and a detector arranged on substantially opposing sides of the collection recess, wherein the combined outputs of the total internal reflection sensor and the transmission sensor uniquely identify each of the following: single-phase fluid, froth, and gas.

(Claim 58).

Woolford describes a sensing means that is a two or three electrode conductivity sensor. Woolford describes that the sensing means may alternatively comprise optical, thermal, acoustic (ultrasonic) or other liquid sensing means. Johannesson describes a first sensor (e.g., optical detectors) for detecting gas bubbles in a flow of milk, a second sensor that detects an air bubble at a different location, a milk flow sensor operable to detect milk flow in the analysis conduit, and the quantity sensor discussed above. Sandholm describes mixing milk with a known amount of trypsin. Woolford, Johannesson, and Sandholm, alone or in combination, do not teach or suggest a total internal reflection sensor and a transmission sensor,

wherein the combined outputs of the total internal reflection sensor and the transmission sensor uniquely identify each of the following: single-phase fluid, froth, and gas.

CONCLUSION

Applicants respectfully submit that in view of the amendments and arguments set forth herein, the applicable objections and rejections have been overcome. Applicants reserve all rights under the doctrine of equivalents.

Pursuant to 37 C.F.R. 1.136(a)(3), applicants hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

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